

REMARKS

Claims 1-19 were presented for examination in the present application and remain pending for consideration upon entry of the instant amendment, which is respectfully requested. Claims 1 and 15 are independent.

Rejected under §103

Independent claims 1 and 15, as well as dependent claims 2, 5-14, and 16-19, were finally rejected under 35 U.S.C. §103(b) over U.S. Patent No. 4,877,745 to Hayes (Hayes) in view of U.S. Patent No. 6,296,811 to Sasaki (Sasaki).

Applicant respectfully maintains the traversal of these rejections.

Independent claim 1 recites, in part, that "a damping pulse generated by the pulse generator **at the end of the series of droplets** for damping the postoscillation of the liquid dispensing device (emphasis added)".

The Office Action acknowledges that Hayes fails to disclose or suggest the claimed damping pulse. Rather, the Office Action asserts that Sasaki discloses a method designed to eliminate the production of undesired fluid responses to actuation.

Applicant respectfully disagrees.

Sasaki is based on the problem that the fluid will not only be forced in forward direction towards the nozzle but also backwards away from the nozzle at the same time. Therefore, Sasaki discloses that the ejection of droplets can be inefficient and may even be impossible. See col. 3, lines 4 to 11. Thus, the solution described Sasaki is to have **two actuators**, a dispensing actuator and a damping actuator. Here, the actuator having a larger distance from the nozzle as damping actuator and is timed to

actuate **before** the dispensing actuator. In doing this, Sasaki discloses that impulses towards the nozzle are added so that backward movement of the liquid is avoided.

Applicant submits that the damping actuator of Sasaki, which requires two different actuators where one of these actuators is actuated **before** dispensing, fails to disclose or suggest the damping pulse of claim 1 that is generated by the same pulse generator and that occurs **at the end of the series of droplets**.

Further, Applicant submits that modification of Sasaki to actuate its damping actuator at the end of the dispensing instead of before the dispensing commences would render Sasaki unsuitable for its intended purpose. *See Ex parte Rosenfeld*, 130 USPQ 113, 115 (Bd. App. 1961) (modification that renders apparatus unsuitable for its intended purpose cannot be said to have been obvious to one of ordinary skill in the art).

The Final Office Action asserts that the claimed "pulse generator" is not limited to a single actuator and therefore the two piece actuator of Saski is not precluded. In the interest of clarity, claim 1 has been amended to change "pulse generator" to "piezo actor".

Applicant submits that clarified claim 1 now makes clear that the same piezo actor that provides the "activating pulse" to generate the droplets **also** generates the "damping pulse" at the end of the series of droplets for damping the postoscillation of the liquid dispensing device.

Applicant submits that the two piece actuator of Saski fails to disclose or suggest the use of a piezo actor to provide both the "activating pulse" and the "damping pulse" in the manner recited by present claim 1.

As such, Applicant submits that present claim 1, as well as claims 2 and 5-14 that depend therefrom, are allowable over the proposed combination of cited art. Reconsideration and withdrawal of the rejection to claims 1-2 and 5-14 are respectfully requested.

Independent claim 15, similar to claim 1 discussed in detail above, in part, recites the steps of "activating a pulse generator of the liquid dispensing device to generate an activating pulse, the activating pulse being configured to dispense a series of droplets" and "activating the pulse generator to generate a damping pulse at an end of the series of droplets for damping a postoscillation".

Applicant maintains that the proposed combination of Hayes and Sasaki fails to disclose or suggest activating the same pulse generator to dispense liquid and to dampen postoscillation by timing the dampening pulse at the end of the series of droplets as recited by claim 15.

Further, and in the interest of clarity, claim 15 has also been amended to change "pulse generator" to "piezo actor". Thus, clarified claim 15 now recites the steps of "activating a piezo actor of the liquid dispensing device to generate an activating pulse" and "activating the piezo actor to generate a damping pulse".

As such, claim 15 makes clear that the same piezo actor provides the "activating pulse" and the "damping pulse", which is simply not disclosed or suggested by the two piece actuator of Saski.

Accordingly, claim 15, as well as claims 16-19 that depend therefrom, are allowable over the proposed combination of cited art. Reconsideration and withdrawal of the rejection to claims 15-19 are respectfully requested.

Summary

In view of the above, it is respectfully submitted that the present application is in condition for allowance. Such action is solicited.

In the alternative, Applicant submits that the instant amendment places the present application in better condition for appeal. Accordingly, entry and consideration of the instant amendment, at least for the purposes of appeal, are respectfully requested.

Moreover, Applicant submits that the instant amendment merely clarifies claims 1-2 and 15-16 by replacing "pulse generator" with "piezo actor". Thus, Applicant submits that the instant amendment does not require further search and consideration. Accordingly, entry and consideration of the instant amendment are respectfully requested.

If for any reason the Examiner feels that consultation with Applicant's attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below.

Respectfully submitted,

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